

WHAT IS CLAIMED IS:

1. A sheet feeding apparatus comprising:

rotatable feeding means for feeding a sheet by rotation thereof;

supporting means, having a supporting portion movable toward and away from the rotatable feeding means, for supporting a plurality of stacked sheets from a side opposite from the rotatable feeding means, and for elastically causing one sheet closest to the rotatable feeding means to contact the rotatable feeding means;

separating means, having an abutting portion movable toward and away from the rotatable feeding means, for elastically holding the sheets between the abutting portion and the rotatable feeding means, and for separating the sheets so as to allow only the one sheet closest to the rotatable feeding means to be fed out with the rotation of the rotatable feeding means, the separating means being disposed downstream of the supporting means in a sheet feeding direction;

sheet separating means for displacing remaining sheets in a direction away from the rotatable feeding means when the one sheet has been advanced to a target position reaching sheet transporting means disposed downstream in the sheet feeding direction;

abutting portion separating means for moving the abutting portion in a direction away from the rotatable feeding means so as to release the holding of the sheets between the abutting portion and the abutting portion and the rotatable feeding means when the one sheet has reached the target position; and

limiting means for preventing the remaining sheets, excluding the one sheet, from moving downstream in the sheet feeding direction when the one sheet has reached the target position.

2. The sheet feeding apparatus of claim 1, wherein the sheet separating means is provided adjacent to the rotatable feeding means, and displaces the sheets near the rotatable feeding means by pressing the sheets from a side adjacent to the rotatable feeding means.

3. The sheet feeding apparatus of claim 1, wherein the limiting means aligns leading edges of leftover sheets which are the sheets fed to the separating means from the remaining sheets by the rotatable feeding means and separated from the one sheet by the separating means.

4. The sheet feeding apparatus of claim 3, wherein the sheet separating means and the limiting means are

integrally disposed;

the sheet separating means pushes back leftover sheets upstream of the separating means in the sheet feeding direction; and

the limiting means aligns and supports the leading edges of the leftover sheets pushed back by the sheet separating means.

5. The sheet feeding apparatus of claim 1, further comprising:

a common drive shaft member rotatably supported, for driving in common the sheet separating means, the abutting portion separating means, and the limiting means which are connected in common;

a rotational driving source; and

transmitting means for transmitting a drive force from the rotational driving source to the common drive shaft member, the transmitting means having a partially toothed gear with teeth formed only on a portion of a circumference thereof.

6. The sheet feeding apparatus of claim 1, further comprising:

a feed shaft member rotatably supported, the rotatable feeding means being connected thereto;

a common drive shaft member rotatably supported, for driving in common the sheet separating means, the abutting portion separating means, and the limiting means which are connected thereto in common;

a rotational driving source; and

transmitting means for transmitting a drive force from the rotational driving source to the feed shaft member and the common drive shaft member, the transmitting means having a sun gear which rotates in an interlocking fashion with an output shaft of the rotational driving source, a feed input gear which is mounted in an area surrounding the sun gear and rotates in an interlocking fashion with the feed shaft member, a common input gear which is mounted in the area surrounding the sun gear and in a position circumferentially spaced apart from the feed input gear and rotates in an interlocking fashion with the common drive shaft member, and a planet gear which is in meshing engagement with the sun gear, and

the planet gear being mounted so as to be movable around the sun gear between a feed input position, where rotational force is transmitted to the feed input gear, and a common input position, where rotational force is transmitted to the common input gear.